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More or less money? An experimental study on receiving money

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ABSTRACT

Is more money better than less? Not always. It depends on the situation. If more money for oneself means less money for a stranger, the majority of participants in dictator games choose less money for themselves. But if they really are alone - and thus, do not have to share with a stranger - will they always choose to receive more money instead of less? Here, I report results from seven experiments where on average, one-third of a total of 3,503 participants chose to receive less money instead of more. In one experiment, the majority chose to receive less money. If participants in experiments prefer getting less money for more money, interpretation of economic experiments becomes potentially compromised. As I used a randomized payment scheme in all experiments, this may raise a reasonable concern about whether the result generalizes to a scheme in which all subjects are paid.

1. Introduction

A surprising result from one experiment is the point of departure for this paper. The participants were asked to choose between receiving more money or less. The experiment followed standard procedures. I used a randomized payment scheme in which only a subset of the participants were paid. It was a double-blinded design in which neither the participants nor the experimenters could identify the choices made by specific participants. To my surprise, a substantial minority, 28.6% of 91 participants, decided to receive less money. Deciding to receive less money in itself is not a surprise as this is common in many standard experiments such as dictator, ultimatum, and public goods games. Choosing less money in these situations may reflect the decision maker's strategic behavior or concern toward the other subjects. In the dictator game, choosing less money may reflect concern for the recipient. The strength of the dictator game is that it separates the decision maker's concern for the recipient from strategic considerations toward the recipient. The more or less money choice goes one step further from the dictator game as it removes explicit consideration of others participants.

If participants in experiments prefer receiving less money than more, the interpretation of economic experiments may be compromised. The result can be explained in at least three ways, and all may affect the interpretations of other experiments. First, subjects' choice to receive less money, may reflect an experimenter demand effect (Hoffman et al., 1994; Zizzo, 2010; Chlaß and Moffat, 2017). Second, subjects may have social preferences toward the experimenter, perceiving they are playing a dictator game with the experimenter. Choosing less money leaves more money for the experimenter. This explanation, however, may also be problematic for the interpretation of experiment results whenever subjects fail to maximize their joint payoff. For example, rejecting an offer in an ultimatum game or less trust in a trust game results in the subjects passing on money to the experimenter. Choosing non-cooperation in a public good game increases the payoff for oneself, but it also leaving money to the experimenter.

Third, the interpretation of economic experiments is often restricted to a reference group of subjects who play against each other (Fehr and Schmidt, 1999:821–822; Bolton and Ockenfels, 2000:171). In the more or less money choice the reference group is reduced to the decision maker only. Therefore, choosing less money may suggest that subjects care about how they perceive themselves. If this self-esteem restricts the subjects' behavior in more or less money decision, it may also influence their behavior in other experiments. For example, dictators giving to an anonymous recipient is often interpreted, as the dictator preferring equality in the payoff or following a norm for equity and social-esteem (Ellingsen and Johannesson, 2008; Dreber et al., 2013; Hauge, 2016).[1] However, among those that chose to receive less money in my experiment, a clear majority, 88,5% of the 26 particpants, choose an even split in the corresponding dictator game. Hence, giving in a dictator

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[1] For an interpretation of dictator giving as a social preference for inequality see Fehr and Schmidt (1999), Bolton and Ockenfels (2000), Charness and Rabin (2002), Falk and Fischbacher (2006), and Cappelen *et al.* (2007). This interpretation is an ongoing discussion in the literature (List 2007; Levitt and List 2007; List 2009; Berg and Gigerenzer 2010; Binmore and Shaked 2010; Fehr and Schmidt 2010; Eckel and Gintis 2010; Wilson 2010; Smith and Wilson 2014; Kimbrough and Vostroknutov 2015).

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Table 1
Overall results for experiments.

EXP	*N*	Type	Description	Payment lottery frequency	Less money
1	91	Classroom	More or less and dictator, within-subjects design	500 kroner 4/91	28.6%
2	151	Classroom	More or less and dictator, between-subjects design	500 kroner 4/151	36.0%
3, 4	181	Classroom	Experienced versus inexperienced subjects. More or less and dictator, between-subjects design	500 kroner 4/181	30.4%
5	200	Lab, 20 sessions	Strengthen entitlements. More or less and dictator, between-subjects design	500 kroner 1/10	64.5%
6	1019	Web-based	Explaining, ex post their choices in an open-ended question	1800 kroner 1/1019	22.6%
7	1861	Web-based	Deliberation, inexperience versus experienced, explaining choices ex post and ex ante	1800 kroner 1/1861	29.2%
8	120	Lab, 4 sessions	Norm elicitation	500 kroner 12/120	19.0%[a]
9	40	Classroom	Norm elicitation	500 kroner 10/157	38.0%[a]

Note: the payment in all the experiments is conditional on winning in a lottery; the column with the Payment Lottery shows the prices in Norwegian kroner and frequency of winning. a) Percentage that states that it is "very socially inappropriate" or "socially inappropriate" to keep all the money for themselves.

game can be explained by self-esteem, not social preference or social-esteem, as usually is done.[2] As I used a randomized payment another selfish explanation is that subjects do magical thinking, they believe that claiming less money instead of more increases their probability of winning (Arad, 2014).

If the experimenter demand effect, social preference toward the experimenter, self-esteem, or magical thinking are that strong in the more or less money experiment, they may also be strong in other experiments. Therefore, the interpretation of many experiments may be compromised. Whether these explanations actually carry over to other experiments is an empirical question. Such investigations are beyond the scope of this paper.

The aim of this paper is to investigate whether the result that some participants choose to receive less money instead of more holds in other experimental situations and whether it translates to the general population. I created experimental situations that would make accepting more money seem more appropriate for the subjects. Table 1 presents the overall results and features of the decision situations: (1) The experience of participating in experiments (reported in experiments 3 and 4). (2) Strengthening the participants' entitlement to the money (Experiment 5). (3) According to the social heuristic hypothesis, deliberations before the actual choice of more or less money should tilt the decision in the direction of accepting more money (Rand et al., 2014) (experiments 6 and 7). The participants were also asked to explain their choice of more or less money in an open-ended question (experiments 6 and 7). These open-ended experiments were performed in the Norwegian Citizen Panel, a web-based survey of randomized sample of the Norwegian population aged 18 to 76 years. Finally, I elicited norms in the situations of receiving more or less money using the elicitation procedures developed by Krupka and Weber (2013) (experiments 8 and 9).

The overall result is that a considerable minority of the participants in the experiments chose to receive less money instead of more; see Table 1. In Experiment 5—the only one where the participant could choose to receive incrementally less money—the majority, 64.5% of 200 participants, decided to receive less money. In the norm elicitation experiments, a minority stated that choosing to receive all the money is inappropriate.

I used a randomized payment scheme in all experiments; in each experiment, a percentage of the participants were randomly drawn to receive money. The prices and frequencies of winning are shown in Table 1. For a subject choosing less money instead of more, the expected forgoing of money ranges from, low 0.43 kroner in Experiment 7, to high, 50 kroner in Experiment 5. These numbers correspond to expected hourly payment of 26 and 3000 kroner, respectively.[3] Clearly, using randomized payment schemes and very low probabilities of being paid in some of the experiments may raise the question whether the result holds for experiments in which all are paid. Many experiments, however, use random payment schemes in which either some subjects are paid, or subjects make multiple decisions and only a fraction of them are paid (Azrieli et al., 2018; Charness et al., 2016). It is also some empirical evidence that higher, less likely nominal payment may be more salient than lower, more certain payment (Charness et al., 2016, p. 142). Furthermore, comparing a randomized payment scheme with a standard payment scheme, there seems to be no difference in the pattern of giving in a standard dictator game and behavior in the ultimatum game (Charness et al., 2016 and Clot et al., 2018). However, in experiments where the moral dimension may be more salient, as it may be in the more or less money experiment reported here, with a randomized payment scheme the benefit of signaling social esteem or self-esteem is chosen by certainty while the monetary cost of signaling is paid only in a fraction of the times (Charness et al., 2016: 148). This asymmetry between cost and benefit may cause difference in results between experiments with randomized payment schemes and experiments in which all are paid.[4]

The point of departure for this paper was rather unusual as it started with a surprising result. In hindsight, perhaps I should not have been surprised because in some universally experienced situations outside the lab, people select less instead of more money. For example, customers return to a shop if they discover that the cashier forgot to charge them for an item. People routinely take found wallets to the lost and found, and they do likewise in field experiments (Stoop, 2014). Similar results are reported in the experimental literature. In a meta-study of 72 studies with more than 32,000 subjects across 43 countries using the lying set-up introduced by Fischbacher and Föllmi-Heusi (2013), the subjects forewent, on average, about three-quarters of the gains from lying (Abeler et al., 2016:2). Many participants reported non-

[2] As the more or less money choice resembles the dictator game, the result that participants prefer getting less money for more are in line with experimental findings that dictator's giving depend on context (Dana et.al. (2006); List (2007); Bardsley (2008)).

[3] The estimated hourly wage is based on that subjects used on average one minute.

[4] I thank an anonymous reviewer for pointing out this mechanism. Note that in Experiment 5, in which the expected cost of signaling is highest (50 kroner), as many as 64.5% chose to receive less money.

maximizing payoff numbers more often than their truthful likelihood (Abeler et al., 2016:8). The "No Die" treatment in Fischbacher and Föllmi-Heusi (2013), resembled the more or less choice the most: The participants were asked to pick a number between 1 and 6 with the same incentivized payoff as in the roll die treatment. Among the participants (n = 34), 15% chose to receive less money instead of more.

Arad (2014) reports that a considerable number of participants in picking between lotteries that differ only in their prizes, selected lotteries with prizes less than the maximum prize. She explains her results with magical thinking. By choosing the lottery with the lowest price participants believe this would increase their chances of winning. Magical thinking may be an explanation for choosing less money for more as I used randomized payment scheme in all experiments. Among those 454 participants that picked less money in experiments 6 and 7, 10.6% explained their choice as magical thinking.

The results presented in this paper may be driven by norms common to Norwegians but less common elsewhere. In general, behavior in experiment has been shown to vary across societies (Henrich et al., 2010; Herrmann et al., 2008), and it may also do so in the "more or less money" experiment. However behavior in standard experiments in Norwegian samples does not deviate radically from behavior in similar experiments from samples in Western countries. Reigstad et al. (2017) compared pro-social behavior in different games conducted in Norway and the US and found that pro-social behavior is very similar in the two countries, both across individuals and over time. Cappelen et al. (2015) compared Norwegian students' behavior in dictator game and found that their behavior was not substantially different from that reported in the meta-study by Engel (2011). In experiments 1–5, I also conducted standard dictator games, and the behavior of the dictator does not deviate radically from the results previously reported in the literature.

2. The "surprising" experiments

The experiments were performed in an auditorium in a class situation. The participants were paid real money. The procedures were double-blinded; neither the participants nor the experimenters could identify specific participants' choices. The participants faced two decisions.[5] First, as dictators they were asked to split 500 kroner (around USD 75 at that time), either an even split (250 kroner for each) or an uneven split (450 kroner for oneself and 50 kroner to the other). This was a replication of the seminal dictator game reported by dictator game reported by Kahneman et al. (1986).[6] In the second decision, the participants were asked to choose between *receiving* 450 kroner or 250 kroner. My motivation for this second choice was to show that in absence of a receiver, dictators would be motivated by monetary reward only and choose to receive 450 kroner. The more or less money decision was explained as follows to the participants:

> Two persons in the auditorium will be randomly drawn to receive money. If you are one of those two persons, you have to decide whether you will receive 250 kroner or 450 kroner. You can mark only one of the options. If you mark two or none, you will receive 0 kroner. Mark your choice:
> I will accept 450 kroner, thank you.
> I will accept 250 kroner, thank you.

The monetary opportunity cost was the same in both choices. The difference between the two decisions was that there was no explicit reference to the recipient of the foregone money in the more or less choice. I performed two experiments:

Experiment 1 (N = 91). The participants were students in a first-semester class in economics at the University of Bergen, Norway. They answered the dictator and the more or less questions in randomized order.

Experiment 2 (N = 151). The participants were students in a first-semester course in a business and administration class at the Norwegian School of Business (BI) in Bergen. The class was randomized into two groups: one half faced the more or less decision, and the other half played the dictator game.[7]

Table 2 reports the results from the two experiments. Almost one-third chose less money instead of more (31.9% out of 166 participants).[8] Out of 167 participants, 70.1% of the dictators chose an even split. This result replicates the result of the dictator game in Kahneman et al. (1986, S291), where 76% out of 161 chose an even distribution (USD 10 to each) over an uneven distribution (USD 18 to the dictator and USD 2 to the other participant).

Note: The dictator choice was an even distribution (250 kroner, 250 kroner) versus an uneven distribution (450 kroner, 50 kroner). The more or less question presented participants with the choice of receiving 250 or 450 kroner.

3. Experience

Experience as participants in experiments and as students on campus may change behavior in experiments. Participants with experience in experiments may find it more appropriate to accept money in an experimental situation. Students with more semesters on campus may have talked to fellow students about participating in experiments and find it more acceptable to accept money in this situation. To investigate this idea further, I ran the same experiments in two different second-semester classes while I conducted experiments 1 and 2 in first-semester classes. Otherwise, the experimental procedure was similar in experiments 1 and 2. For more details, see Appendix A.

Experiment 3 (N = 78). The participants were undergraduate students in a second-semester class in economics and business administration at Bergen University City College.

Experiment 4 (N = 104). The participants were undergraduate students in a second-semester economics class at the University of Bergen. To let them acquire more experience in participating in experiments, I conducted an additional experiment (not reported here) in the same class 14 days *before* Experiment 4.

Table 3 shows the main results. Overall, 30.4% of 181 participants choose less money instead of more. Neither reported experience as participants in experiments nor number of semesters as students seemed to affect the tendency to accept less money instead of more. This result was confirmed with an OLS regression controlling for gender, numbers of semesters as students, and whether the student is in an economics class (see Table D1 in Appendix D).

In the dictator choice, 61.9% chose the even distribution, which is similar to the result in Kahneman et al. (1986). More reported experience as participants in experiments is negatively correlated with splitting evenly in the dictator game; see the OLS regression reported in

[5] Details of the experimental procedures are provided in Appendix A.

[6] In Kahneman et al. (1986, S290-291), the dictator had to divide 20 US dollars with an anonymous participant in either an even split (10 dollars each) or an uneven split (18 dollars to oneself and 2 dollars to the other). In my experiment, the participants were given 500 Norwegian kroner to approximate 20 US dollars in 1985 but with the same shares: 1:1 in an even split and 1:9 in an uneven one.

[7] I decided to run Experiment 2 after I observed the results from Experiment 1. I believed that the participants in Experiment 1 may have been confused by the two questions on their decision sheet.

[8] In Experiment 1, the participants addressed both questions in random order; there was no statistically significant difference in the order (Pearson's chi-square test, p = 0.320). There was no statistically significant difference between experiments 1 and 2 (p = 0.307) or between male and female students (p = 0.217). These results were confirmed with an ordinary least squares (OLS) regression reported in the supplementary section.

Table 2
Shares of participants who chose an even distribution as dictators and less money instead of more in experiments 1 and 2.

Experiment	Dictator chose an even distribution	Chose less instead of more money	# of participants
1	0.648	0.286	91
2	0.763	–	76
2	–	0.360	75
Both	0.701	0.319	242

Table 3
Experiments 3 and 4. Shares of participants who chose less in the more or less question and chose an even distribution in the dictator game for different experiences.

		Have you participated in such experiments before?			
	All	No, never	Yes, 1 time	Yes, 2 times	Yes, 3 or more times
Less instead of more	0.304	0.337	0.333	0.189	0.312
Even distribution	0.619	0.786	0.564	0.378	0.375
# of subjects	181	89	39	37	16

Note: the dictator choice was an even distribution (250 kroner, 250 kroner) versus an uneven distribution (450 kroner, 50 kroner). The more or less question offered the participants the choice of receiving 250 or 450 kroner.

Table D2 in Appendix D.

4. Strengthen entitlements

In the more or less money choice, stronger entitlement to the money may make it more appropriate to keep money. Experiment 5 strengthens participants' entitlements to the money compared to experiments 1–4 where the participants were in a classroom and did not actively choose to participate in the experiment.[9] In Experiment 5, the participants volunteered for the experiment with a promised payment of 100 kroner for showing up on time and an additional payment depending on their choices in the experiment. In volunteering for the experiments with a promised payment, the selected participants may believe that receiving money in the experimental situations is appropriate. In addition, by inviting participants with a promise to pay, participants may infer that the experimenter believes it is appropriate for the participants to leave the lab with money. To strengthen the entitlement further, the more or less question was framed as *keeping your* money.

Experiment 5 ($N = 200$) was performed in a lab at the University of Bergen. The participants were recruited via email from an undergraduate student population of the social science, natural science, and humanities departments at the University of Bergen. We ran 20 sessions with 10 participants in each session. The sessions lasted around 35 min. The average payment was 203 kroner.[10]

The participants were informed that one of the participants in their session would be drawn to win 500 kroner. The more or less money question was framed as how much you want to *keep* for yourself conditional on winning 500 kroner. The distribution of the kept money is shown in the left panel in Fig. 1. The majority of the participants (64.5%) chose to keep less than the whole endowment of 500 kroner. On average, the participants kept 71.3% of the endowment. Participants who reported they had participated in an experiment before kept, on average, 9.5% more of the endowment than those without experience (statistically significant, Mann–Whitney rank sum test $p = 0.002$).[11]

After the more or less choice, the participants faced a dictator choice framed as giving money to a random person drawn from the Norwegian population. In the more or less money choices, there was no reference in the instruction to a recipient for the foregone money. By explicitly referring to the experimenters as receivers in a dictator game, Tonin and Vlassopoulos (2014) find that, a considerable number of participants give to the experimenter. Obviously, it is hard—even for the experimenter—to pin down where the renounced money would have gone. One interpretation is that the experimenter uses the foregone money for other experiments and that the foregone money ends up with some participants in experiments. The dictator game in Experiment 5 captures this idea that there is a trade-off between keeping money for yourself and giving money to a random person outside the specific lab situations.

Adding a random person in the Norwegian population as the receiver of the foregone money, the participants share more; see the right panel in Fig. 1. On average, the participants kept 63.1% of the endowment as dictators compared to 71.3% when they were alone (statistically significantly different according to a t-test, $p < 0.00$).[12]

It is remarkable that 69.5% of the participants "gave" the same amount as dictators and when they were alone.[13] In experiments 1, 3, and 4, the participants faced a more or less choice and a binary dictator choice. Overall, in these experiments, 162 of 273 participants (59.3%) gave the same amount in the more or less money choice as they did in the dictator choice.

5. Reflection

Psychologists focus on decision-making within a dual cognitive process (Kahneman, 2009, 20–21). System 1 operates intuitively, automatically, and fast. System 2 demands reflection, deliberation, and time. Rand et al. (2014) use this approach to form the social heuristics hypothesis that social norms are internalized as a type of automatic System 1 process. In one-shot and anonymous social dilemma experiments, participants carry with them their intuitions evolved outside the lab, and they continue to act cooperatively in the lab. However, pressing lab participants to think slowly and deliberately would tilt their choices toward more selfishness.[14]

In line with this hypothesis, reflection should *decrease* the tendency to choose less instead of more money. Furthermore, participants who previously have faced the more or less money choice should also tend to decrease their tendency to choose less money. To test these hypotheses, I ran two experiments on the Norwegian Citizen Panel, a web-based survey of a randomized sample of the Norwegian population aged 18 to 76 years old consisting of around 6000 participants (Ivarsflaten et al., 2015).[15]

[9] They could opt out of the experiment by not handing in their sheet or delivering empty sheets. Overall in experiments 1–4, one participant delivered an empty sheet. We do not know how many that did not hand in their sheet.

[10] The participants addressed the more or less money question at the end of the session, after they had participated in a repeated prisoner's dilemma experiment, not reported here. The experiment was double-blinded and computerized using z-Tree (Fischbacher 2007).

[11] This was confirmed in an OLS regression reported in Table D4 in Appendix D.

[12] The fractions in the left panel are 0.035, 0.005, 0.025, 0.015, 0.030, 0.225, 0.125, 0.003, 0.135, 0.02, and 0.355, and the fractions in the right panel are 0.065, 0.005, 0.015, 0.020, 0.035, 0.320, 0.140, 0.050, 0.100, 0.015, and 0.235.

[13] Note that in Experiment 5 the dictator choice was framed as "giving" and the more or less choice was framed as "keeping." Thus, giving the same amount as a dictator and alone, the participants had to tick different amounts, except in even giving.

[14] The experimental results are mixed; see Rand (2016), Tinghög *et al.* (2013), and Strømland *et al.* (2016).

[15] The participants were not paid, but each round (twice a year), one of them is drawn to win a gift card with a face value of 25,000 kroner. On average, they spent 20 min. answering all the questions in the survey.

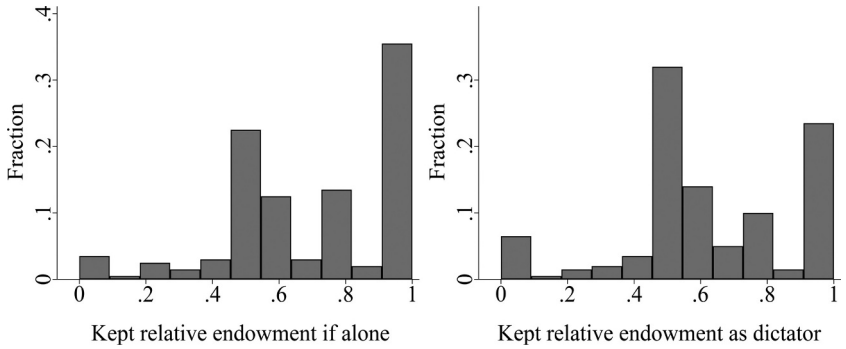

Fig. 1. Distribution of keeping money in Experiment 5, alone and as a dictator.

Experiment 6 was conducted in March–April 2015. A total of 1019 participants, a randomized subsample of the panel, chose between receiving 1000 kroner or 1800 kroner in the condition that they won an extra monetary prize (see Appendix B).

Among the 1019 who answered the question, a considerable minority of 230 participants (22.6%) chose less money.[16] OLS regression (Table D5, Appendix D) shows no statististically significance differences across gender, age, and education. Thus, the result that some choose to receive less money carries over to a broader population and in a web-based experiment.

On the next screen, the participants were reminded about their choice and asked to briefly state why they had made their choice. The participants could not go back to the previous screen and change their decision. I will return to analyses of the stated reasons for their choice in the next sections.

Experiment 7 was performed in November–December 2015, six months after Experiment 6. In the reflection conditions, the participants were asked to explain their choices *before* they chose (question B' in Appendix B).[17] On the next screen, they made their more or less choice without the possibility of returning to the previous screen. In the no-reflection conditions, the participants addressed the more or less question without explaining their choice.

To capture the effect of experience, the sample was split into experienced participants who had made a more or less money choice and explained their choice six months earlier (Experiment 6) and inexperienced participants who had not. The design and frequencies of choosing less instead of more money are given in Table 4.

A total of 1861 participants in Experiment 7 chose between receiving more or less money.[18] Almost one-third (29.2%) of the participants chose less instead of more money.[19]

The overall result is at odds with the social heuristics hypothesis, as reflection combined with experience seems to increase the tendency to choose less instead of more money, a 7.9% increase according to the OLS regression in column (2) in Table D6 in Appendix D.

6. Explaining choices of less money for more

One motivation for conducting experiments 6 and 7 was to understand why some participants chose to receive less money by asking the participants to state why they chose as they did. In Experiment 6, participants explained their choice of more or less money after they had made their choices. In Experiment 7, they explained their choice before they made their choices. I analyzed the answers together. Excluding those who did not answer, I used 1693 answers (89.5% of the subjects answered the question). Among those who answered, 453 chose less money, and 1240 chose more money; see Table B1 in Appendix B for details.

As there was no mention in the instructions about what happened with the foregone money, responds in the panel may have believed they played a dictator game toward the experimenters. As the Norwegian Citizen Panel is research panel within in the University of Bergen and this was highlighted on the introduction screen, the participants may believe that foregone money would go to research. Thus, the respondents on the panel may have interpreted the more or less game as a dictator situation where the receiver was the experimenter. However, only nine of 453 of those who chose less money mentioned research as the receiver of the foregone money, for example, "(t)hen the Citizen Panel can use (the money) for other things" and "the University can use the money for medieval age research." This is in line with Frank (1998) findings that subjects do not seem to care about the experimenter in an experiment of burning money in an ultimatum game. Among those who chose more money, none mentioned research or the experimenter as the receiver of the foregone money.

However, the participants referred to other receivers of the foregone money. Among those who chose *less* money, 97 subjects (21.4%) stated that the rest (800 kroner) could be redistributed. Examples are "(T)he rest can go to charity.", and "Let the rest go to the poor in the world!" Similarly, among those who chose *more* money, 145 subjects (11.7%) stated that they would share and give the money away to charity and their families: "I will give to charity", "Buy something nice to my wife", and "More money; more money to share." These reasons stated above for keeping all the money for themselves are in line with Peter Singer's "efficient altruists" who consider themselves better fit than others to distribute money to help others (Singer, 2015:46).

Among those who chose *less* money, 146 subjects (38.9%) stated non-distributive norms such as: "I did not do this for money", "This is voluntary, and I have not been promised something for participating. Money is not everything in the world", "I am not greedy!", and "It is more than money that matters, even though one is dependent on money." This result is accordance with the literature suggesting that lab

[16] A total of 1050 participants were asked to address the choice of receiving more or less money. Of them, 31 participants (2.95%) did not answer.

[17] I decided to run Experiment 7 after I had performed Experiment 6.

[18] In Experiment 7, a total of 1955 participants in the Norwegian Citizen Panel were asked to choose between receiving more or less money. However, 84 subjects (4.32%) did not answer this question. There were relatively more non-respondents in the reflection conditions than in the no reflection (5.60% versus 2.96%, statistically significantly different, Pearson chi-square, $p = 0.04$). Among the non-respondents, there were subjects who had never faced the more or less question as they had opted out of the survey before this question. Twenty subjects answered neither the question before the more or less question nor any questions after.

[19] As expected, the participants in the reflection conditions, on average, spent considerably less time answering the more or less question than in the non-reflection conditions, 13.3 seconds compared to 25.4 seconds, respectively (t-test, $p < 0.001$). The participants spent, on average, (standard deviation in parentheses) the following time on the different conditions: Experience and Reflection, 12 seconds (7.9); Experience and No reflection, 22.3 seconds (10.3); Inexperience and Reflection, 13.1 seconds (8.4); and Inexperience and No reflection, 28 seconds (27.1). There is no recorded data on how much time they used to explain their choice in the reflection conditions.

Table 4
Frequencies choosing less instead of more money in four treatments in Experiment 7.

Treatments	March–April 2015		November–December 2015	
Experience and reflection (n = 355)	0.235	Explained why	Explained why	0.327
Experience and no reflection (n = 341)	0.225	Explained why	No	0.246
Inexperience and reflection (n = 589)	No	No	Explained why	0.297
Inexperience and no reflection (n = 576)	No	No	No	0.292
OVERALL (n = 1861)				0.292

Note: the table reports the frequencies of choosing less money for more for four random subsamples of the Norwegian Citizen Panel. The phrase "Explained why" means that the participants explained their choice of more or less money. "No" means that the participants did not face the more or less money question or had to explain their choice of more or less money. In the experience conditions, participants who did not answer the more or less question in the March–April 2015 round are excluded: 13 participants in the reflection condition and 6 participants in the no reflection condition.

Table 5
Elicited appropriateness ratings, Experiments 8 and 9.

	Experiment 8: lab experiment (n = 120)					Experiment 9: class room experiment (n = 40)				
Money kept	Mean	–	-	+	+ +	Mean	–	-	+	+ +
0	**0.13**	0.28	0.16	0.14	0.41	**0.28**	0.23	0.15	0.10	0.53
200	**0.43**	0.07	0.22	0.21	0.50	**0.58**	0.03	0.18	0.20	0.60
400	**0.66**	0.05	0.08	0.19	0.67	**0.65**	0.05	0.03	0.33	0.60
600	**0.57**	0.08	0.11	0.20	0.61	**0.55**	0.05	0.10	0.33	0.53
800	**0.59**	0.14	0.05	0.08	0.72	**0.30**	0.13	0.25	0.18	0.45

Note: responses [numerical values] are "Very socially inappropriate" (–) [−1], "Somewhat socially inappropriate" (-) [−1/3], "Somewhat socially appropriate" (+) [+1/3], and "Very socially appropriate" (+ +) [1].

participants' behaviors are also restricted by norms.[20]

In addition, among those who chose *more* money, 60 participants (4.8%) stated non-distributive explanations: "I absolutely deserve it, as I have been willing to participate in the Norwegian Citizen Panel!", "Modesty is not a virtue in this situation", "Not a saint—need money", and "I will not pretend. It doesn't mean anything to my personal finances, but why should I throw 800 kroner away if I win?"

Among those who chose more money, a considerable majority (72.8%) simply stated that more money is better. Examples included "Highest amount," "Because 1800 kroner is more than 1000 kroner!!!!," and "Have around 800 reasons for that."

Among those who chose less money, 77 (17.0%) subjects' answers I classified as misunderstandings. An example is: "Thought that there was a greater chance to receive 1000 kroner; most of the others surely ticked 1800." Such misunderstanding explanations can be rationalized by magical thinking in the sense that participants intuitively associated the highest prize with lower probability as this is usually observed in real-life lotteries (Arad, 2014:21). I classified 62.4% of a total of 77 misunderstandings as magical thinking.

7. Eliciting norms for receiving more or less money

The fact that some participants chose less money for more, even when doing so did not directly affect anyone else, makes it difficult to explain the results with simple social preference models assuming preferences for certain outcomes for others, as the more or less money choice lacks explicit consequences for others. One explanation is that participants care about acting appropriately in the situations independent of the monetary consequences for others. To elicit norms for receiving money, I used Krupka and Weber's (2013) norm elicitation method.

The participants in the experiments faced a hypothetical situation in which person A participated in a lottery to win 800 kroner. Conditional on winning 800 kroner person A had to choose among five actions: to keep 800, 600, 400, 200, or 0 kroner. The participants in the experiment were then asked to indicate how socially appropriate each of the five actions are. The alternatives are "Very socially inappropriate," "Somewhat socially inappropriate," "Somewhat socially appropriate," and "Very socially appropriate." The participants were incentivized to answer what they believed the *other* participants would answer as the participants who answered the mode in each of the five actions had a chance of winning 500 kroner. The mode was formulated as the "most frequently given response." I conducted one experiment in a lab and one in a classroom.

Experiment 8 was performed in the DIGGSCORE lab at the University of Bergen on February 28, 2017. The experiment was conducted with another norm elicitation experiment not reported here. The participants received a fee of 50 kroner for showing up on time. In the elicitation procedure, the participants could win an additional 500 kroner. Overall, 120 subjects participated in four sessions, and in each session, three participants won 500 kroner. The session lengths ranged from 20 to 25 min.

Experiment 9 was conducted on 30 March 2017, at an undergraduate class at Business School (BI), Bergen. The experiment was conducted with another norm elicitation experiment (not reported here) and had 157 participants. Among them 40 evaluated the appropriateness of receiving more or less money.

Converting the answers into numerical scores, Table 5 reports the mean appropriateness scores for each of the five available actions. A considerable minority in both experiments evaluated keeping all money for themselves as inappropriate, 19.0% in Experiment 8 and 38.0% in Experiment 9. In addition, a considerable minority answered that keeping nothing (0 kroner) was inappropriate, 44.0% in Experiment 8 and 38% in Experiment 9. Taking these results at face value, they show that there is heterogeneity in the appropriateness of receiving money.

8. Concluding remarks

The more or less money experiments showed that a considerable number of participants chose to receive less money instead of more in a situation in which they were alone. The result holds across a wide range of contexts; neither experience with participating in experiments nor

[20] A large and growing literature explains lab results by participants following norms in addition to payoffs: Levitt and List (2007), Sugden (2004), Cappelen et al. (2007), Andreoni and Bernheim (2009), and Smith and Wilson (2014).

deliberation before the choice wipes out the result. The result holds for student populations as well as random samples of the Norwegian population, and it holds for classroom, online, and lab experiments. Randomized payment scheme is a common feature for all my experiments. This may raise a reasonable concern about whether the result generalizes to a scheme in which all subjects are paid. With this caveat, I draw the following lessons from the result.

First, this result casts doubt on the interpretation of many economic experiments. If experimental demand effect and social preference for the experimenter explains that subjects prefer getting less money for more and the effects are that strong, these effects may also be strong in other experiments as well.

In experiments 1, 2, and 4, the participants face a more or less choice and a binary dictator choice. Overall, 162 of 273 participants (59.3%) kept the same amount in the more or less choice as in the dictator choice. Among those who chose differently, there were relatively more who chose "more" in the more or less choice and even in the dictator choice (statistically significantly different according to a McNemar different test, $p < 0.000$), (Tables D1–D6).

Another explanation for choosing less money for more is that the participants care about their self-esteem. In experiments 1,3, 4, and 5, the participants faced both a dictator game and the corresponding more or less money choice. The overall picture is that there is a high and positive correlation between giving as a dictator and giving alone. Among those that choose to receive less money experiments 1,3, and 4, a clear majority, 88% out of 81 subjects, chose an even split in corresponding dictator game (see Table D3 in Appendix D). These results may challenge the interpretation of dictator giving as distributive concern or social esteem. Self-esteem may also explain results in dictator game as well in other experiments where subjects interact.

Second, in experiments 6 and 7 a common explanation for receiving less money was non-distributive norms, such as "Don't be greedy" and "This is voluntary, and I have not been promised something for participating". These explanations are in line with Adam Smith's Theory of Moral Sentiments. Central to Adam Smith's theory is that humans are sociable; it is only in and through society that humans become moral beings.[21] Society is a mirror that guides us to sense what constitutes proper actions. Through praise, blame, or no reaction to one's own action, humans gradually sense—through experience—what others expect of them. Humans' desire for praise and fear of blame but also desire for praiseworthiness and fear of blameworthiness drives the approval and disapproval mechanism. The desire for praiseworthiness is not entirely derived from praise; "those two principles though they resemble one another, though they are connected, and often are blended with one another, are yet, in many respect, distinct and independent of one another."[22] Similarly, humans fear blame and being blameworthy, and these two principles are independent of one another in many respects. One prediction from Adam Smith's theory moral is that rules of conduct restrict behavior even in situations where one is alone and there are no apparent consequences for others.

In the more or less money experiments, praise and blame are ruled out by the design, as they were double blinded and there was no possibility for signaling praise and blame (except towards the experimenter). According to Smith's theory, one's judgment of one's own action depends on the praiseworthiness or blameworthiness of the action in addition to self-interest for more money. In line with Smiths theory, those who choose less money for more, the desire for being praiseworthy or fear of blameworthiness overrule the urge for more money. Choosing less money may reflect a desire for praiseworthiness or fear of blameworthiness by following rules of conduct such as: "I did not do this for money" or "Don't be greedy", respectively.

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Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.socec.2019.03.007.

Appendix A. Experimental procedures and instructions for experiments 1, 2, 3, 4, and 5

All experiments were performed in Norwegian.

Experiments 1, 2, 3, and 4

All experiments took place in an auditorium. Experiments 1, 2, 3, and 4 were performed October 30, 2014, November 11, 2014, January 28, 2015, and February 17, 2015, respectively. The experiments started with an experimenter (the same person in all four experiments) reading the following instructions aloud in Norwegian (those specific to Experiment 2 are in parentheses):

> "This is an experiment in making choices. You will receive a sheet where you are asked to make two (one) decision(s). There are no right or wrong decisions. It is real money that is involved. The amounts of money you receive depend on your decisions in the scheme. The money will be paid in a closed envelope; no one will know how much you received."

The participants were then told that there would be a yellow sticky note on the sheet with a number on it. After receiving the sheet with the sticky note, they were asked to check that the number on the sticky note was the same as the number on the sheet. They were instructed to take off the sticky note and keep it. The participants got two (one) minute(s) to fill out their sheets.

After collecting the filled-out sheets, four sheets were randomly drawn. The experimenter left the auditorium with these four sheets and put the

[21] Regarding sociability in Smiths theory, see for examples: Otteson (2002), Phillipson (2010), Rasmussen (2015), Smith and Wilson (2014), Smith and Wilson (2018), and Smith and Wilson (2019).

[22] Adam Smith (1759, III,2.2:114).

corresponding money in a sealed envelope with the corresponding number on the outside. The experimenter returned to the auditorium and put the four sheets back with the other sheets and shuffled all the sheets. Finally, the experimenter handed the four sealed envelopes to the professor, who then handed the four sealed envelopes to the participants *after* the experimenter had left the auditorium.

The questions in experiments 1–4 were as follows:

Question I

Two persons in the auditorium are randomly drawn to receive money: person A and person B. Together, they receive 500 kroner. If you are drawn to be person A, you have to decide how these 500 kroner should be split between you and person B.

You will have two choice alternatives. You can mark only one of the options. If you mark two or none, you will receive 0 kroner. Mark your choice:

Alternative I: I split evenly: 250 kroner to me and 250 kroner to person B: …

Alternative II: I keep 450 kroner for myself and give 50 kroner to person B: …

Question II

Two persons in the auditorium are randomly drawn to receive money. If you are one of those two persons, you have to decide whether you will receive 250 kroner or 450 kroner. You can mark only one of the options. If you mark two or none, you will receive 0 kroner. Mark your choice:

I will accept 450 kroner, thank you.

I will accept 250 kroner, thank you.

Experiment 5

At the end of the 35-minute session in the lab, the participants were asked to make two choices. They were informed that the name of one person in the session (10 participants) would be drawn to receive an extra amount of money based on the two choices:

Question I

If you are drawn to receive 500 kroner, you must choose how much of this money you want to keep for yourself.

If I am drawn to receive 500 kroner, I want to keep …

Question II

If you are drawn to receive 500 kroner, you must choose how much of these 500 kroner you want to give to a random person in the Norwegian population. You will remain anonymous, and no one will find out how much you have chosen to give.

If I am drawn to receive 500 kroner, I want to give to a random person in the Norwegian population…

The procedure for giving money to the random person in the population was as follows. At the same time, we ran Experiment 7 on the Norwegian Citizen Panel where one of the questions was a more or less question. Overall, in the 20 sessions, the payment was 3000 kroner, and this was used in Experiment 7, where participants were randomly drawn to win.

Appendix B. Web survey experiments and open-ended questions (experiments 6 and 7)

I conducted two web-based experiments with two purposes. First, I wanted to investigate how participants explained their choices in the more or less money choice. Second, I wanted to investigate how deliberation affected the more or less choice. The deliberation was done before they made their choice.

Both experiments used the Norwegian Citizen Panel, a web panel survey of a representative sample of the Norwegian population that has two annual rounds. Experiment 6 was performed in round 4 in March–April 2015, and experiment 7 took place in round 5 in November–December 2015. All data is publicly available; see Ivarsflaten et al. (2015).

The more or less question in Experiments 6 and 7 are:

Question A

As a participant in the Norwegian Citizen Panel, you are being included in a drawing for an extra monetary prize. If you win, you can choose to receive 1000 kroner or 1800 kroner. Which would you choose? Please tick one of the options:

Yes, please, I would like to receive 1000 kroner:

Yes, please, I would like to receive 1800 kroner:

The question to explain the subject's choice in Experiment 6 was conditional on choosing to receive 1000 [or 1800] kroner in Question A.

In Experiment 6, on the next screen the participants were reminded about their choice and asked to briefly state why they had made their choice:

Question B

You said yes to receive 1000 [1800] kroner instead of 1800 [1000] kroner. Can you state briefly why you selected this option?

In the reflection condition in Experiment 7, *before* their actual choice to receive more or less (Question A), the participants were asked to briefly state why they chose as they did:

Question B'

As a participant in the Norwegian Citizen Panel, you are being included in a drawing for an extra monetary prize. If you win, you can choose to receive 1000 kroner or 1800 kroner. Before you make your choice, can you briefly state why you are making that choice?

In analyzing the answers, I excluded the respondents who gave no answers. In Experiment 6, after excluding those who did not answer, I used 214 answers (93.0%) among those who chose less money for further analyses and 714 (90.4%) among those who chose more money. Among those who chose more money, 724 answered (92.8%), but I excluded 11 subjects from further analyses to protect their anonymity.

In Experiment 7, the participants addressed question B' before they made their choice. Among the experienced participants, who had addressed the more or less game six months earlier, 105 (92.1%) of those who chose less money answered the question, and 196 (82.3%) among those chose more money. Among the inexperienced participants, 134 (76.6%) of those who chose less money answered the question, and 331 (80.0%) among those chose less.

The answers to the question "can you briefly state why you are making that choice?" give some evidence of why the participants made the choice they did (Table B1).

Table B1
Open-ended answers for different experiments conditional on choosing less and more money.

Classification of explanations experiments	Chose less money	Chose more money
Redistributions	"The rest can go to charity"	"I will give to charity," "Buy something nice for my wife," "If I win, I will give to the refugee case, and 1800 is more than 1000," and "More money, more money to share"
Exp. 6: inexperienced, ex post	50/214 (23.4%)	70/713 (9.8%)
Exp. 7: experienced, ex ante	18/114 (17.1%)	26/196 (13.3%)
Exp. 7: inexperienced, ex ante	29/134 (21.6%)	49/414 (14.8%)
Redistributions to research	"Then the Citizen Panel can use (the money) for other things," "Money can go to medieval age research"	
Exp. 6: inexperienced, ex post	6/214 (2.8%)	0/713 (0.0%)
Exp. 7: experienced, ex ante	3/114 (2.9%)	0/196 (0.0%)
Exp. 7: inexperienced, ex ante	0/134 (0.0%)	0/331 (0.0%)
Non-distributive	"I am not greedy," "The amount is large enough," "1000 kroner is appropriate for such participation," and "Lowest amount. I do not do this for money"	"Modesty is not a virtue in these situations," "I participate in a serious survey, money is not important"
Exp. 6: inexperienced, ex post	90/214 (42.1%)	33/713 (4.6%)
Exp. 7: experienced, ex ante	37/114 (35.2%)	16/196 (8.6%)
Exp. 7: inexperienced, ex ante	49/134 (36.6%)	11/331 (3.3%)
MORE MONEY IS BETTER THAN LESS		"Highest amount," "Have around 800 reasons for that," and "I need the money now"
Exp. 6: inexperienced, ex post		576/713 (80.8%)
Exp. 7: experienced, ex ante		127/196 (64.8%)
Exp. 7: inexperienced, ex ante		200/331 (60.4%)
Misunderstandings	"Thought that there was a greater chance to receive 1000 kroner; most of the others surely ticked 1800"	"Greater chance of winning"
Exp. 6: inexperienced, ex post	26/214 (12.1%)	0/713 (0%)
Exp. 7: experienced, ex ante	25/114 (23.8%)	1/196 (0.5%)
Exp. 7: inexperienced, ex ante	26/134 (19.4%)	1/331 (0.3%)
Not classified (combinations)		
Exp. 6: inexperienced, ex post	42/214 (19.6%)	34/713 (4.8%)
Exp. 7: experienced, ex ante	22/114 (20.9%)	26/196 (13.3%)
Exp. 7: inexperienced, ex ante	30/132 (22.4%)	70/200 (21.1%)

Appendix C. Norm elicitations experimental instructions

The instructions were the same for Experiments 8 and 9. Exceptions are marked with (.) for Experiment 8 and [.] for Experiment 9.

Instructions

In this experiment, you will be presented with different hypothetical situations where "Person A" has to make a decision. The situations will be presented with a description of the decision-making problem and possible actions Person A can take.

After having read the description of the situation, you will be asked to evaluate how socially appropriate and consistent with moral or proper social behavior each action Person A can take is. The actions are evaluated on a scale from "Very socially inappropriate" to "Very socially appropriate." By socially appropriate, we mean behavior that most people would agree is correct or ethical. Another way to understand it is that if a person were to choose a socially inappropriate action, others might be angry or upset about the person's behavior. To give you an idea of how the experiment works, an example follows below.

Example

Person A is at a coffee shop near the university. Here, Person A discovers that someone has left a wallet on one of the tables. Person A has to make a decision about what to do with the wallet. There are four possible actions: Take the wallet, ask others nearby if they own the wallet, leave the wallet where it is, or give the wallet to the personnel at the coffee shop. Please evaluate each of the possible actions, and then mark your answers with a cross.

Actions	Very socially inappropriate	Somewhat socially inappropriate	Somewhat socially appropriate	Very socially appropriate
Take the wallet	X			
Ask others nearby				X
Leave the wallet where it is		X		
Give the wallet to the personnel				X

After the experiment, a random action will be drawn. From the participants who have evaluated this action in the same way as most others have, (3) [10] participants will be drawn and receive a payment of 500 kr. If you have evaluated the action differently than most others, you will not be a part in the drawing to receive 500 kr.

Assume that Person A takes part in a lottery to win 800 kr. In advance, Person A will have to make a decision on how much money to keep. Person A can choose to keep 800 kroner, 600 kroner, 400 kroner, 200 kroner, or 0 kroner.

The table below shows all available actions for Person A. Please indicate how socially appropriate each of the five actions are. Remember that if your evaluation of a randomly drawn action matches the most frequently given response, you have a chance to win 500 kroner. Please mark your answers.

Person A's alternatives	Very socially inappropriate	Somewhat socially inappropriate	Somewhat socially appropriate	Very socially appropriate
Keep 800 (800 kroner)				
Keep 600 (600 kroner)				
Keep 400 (400 kroner)				
Keep 200 (200 kroner)				
Keep 0 (0 kroner)				

Appendix D. Supplementary regression results

Experiments 1–4

Table D1
Probability of choosing less in Experiments 1–4.

Experiments	1	1 and 2	3 and 4
Female	0.114	0.0747	0.0869
	(0.0957)	(0.0768)	(0.0728)
Dictator question first	0.0931		
	(0.0950)		
Previously participated in experiments?			
Yes, 1 time			0.0290
			(0.117)
Yes, 2 times			–0.106
			(0.124)
Yes, 3 or more times			0.0311 (0.154)
# semesters as student			–0.0273
			(0.0380)
Econ class		–0.0523	–0.0214
		(0.0763)	(0.112)
Constant	0.190**	0.305***	0.346***
	(0.0787)	(0.0780)	(0.112)
Observations	91	166	182
R^2	0.026	0.012	0.028

Note: standard errors in parentheses. Statistical significance levels: $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table D2
Probability for choosing even distribution as a dictator for Experiments 1–4.

Experiments	1 and 2	3 and 4
Female	0.107	0.140*
	(0.0735)	(0.0713)
Previously participated in experiments?		
Yes, 1 time		–0.133
		(0.115)
Yes, 2 times		–0.291**
		(0.122)
Yes, 3 or more times		–0.265* (0.151)
# semester as student		0.00603 (0.0372)
Econ class	–0.0963	–0.113
	(0.0733)	(0.110)
Constant	0.697***	0.704***
	(0.0737)	(0.110)
Observations	166	182
R^2	0.031	0.164

Standard errors in parentheses, $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table D3
Number choosing even and uneven distribution in the dictator game conditional on choosing less or more (percentages in parentheses) in experiments 1, 3, and 4.

	Even (250 kroner, 250 kroner)	Uneven (450 kroner, 50 kroner)	# subjects
250 kroner	71 (0.261)	10 (0.037)	81
450 kroner	101 (0.370)	91 (0.333)	192
# subjects	172	101	273

Note: The choices are in randomized order.

Table D4
OLS regression of the kept share of endowment of 500 kroner if alone, Experiment 5.

Female	0.0101
	(0.0394)
Participated in experiments before	0.126*** (0.0410)
Constant	0.664***
	(0.0350)
Observations	200
R^2	0.046

Standard errors in parentheses. Statistical significance levels: $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$.

Table D5
Probability of choosing less (Experiment 6).

Female	–0.0117
	(0.0271)
Recruited late	0.0109
	(0.0272)
Upper secondary education	–0.0567 (0.0532)
University or University College	–0.0801 (0.0508)
Age 26–35	–0.0600
	(0.0604)
Age 36–45	0.00217
	(0.0582)
Age 46–55	–0.0168
	(0.0551)
Age 56–65	0.0737
	(0.0549)
Age 66–75	0.0110
	(0.0603)
Age 76 and older	0.0670
	(0.0831)
Constant	0.281***
	(0.0675)
Observations	973
R^2	0.015

Note: standard errors in parentheses, Statistical significance levels: $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$. The table reports the OLS regressions. The reference category for the education dummies is "No education or elementary school" and for the age variables is "Age 18–25." The number of observations is fewer than the 1019 subjects who answered the more or less money question due to missing observations on other variables.

Table D6
Probability of choosing less (Experiment 7).

	(1)	(2)
Reflection	0.00545	0.00260
	(0.0266)	(0.0266)
Experience	–0.0453	–0.0487
	(0.0310)	(0.0310)
Refl. × Experience	0.0750*	0.0789*
	(0.0435)	(0.0436)
Woman		–0.0131 (0.0212)
Recruited late		0.0138
		(0.0211)
Age 26–35		0.00885
		(0.0553)
Age 36–45		0.0181
		(0.0530)
Age 46–55		0.0288
		(0.0507)
Age 56–65		0.0296
		(0.0503)
Age 66–75		0.0902*
		(0.0516)
Age 76 and older		0.185***
		(0.0678)
Constant	0.292***	0.251***
	(0.0189)	(0.0509)
Observations	1861	1861
R^2	0.003	0.012

Note: OLS regressions, standard errors in parentheses, and Statistical significance levels: $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$. The reference category for the age variables is "Age 18–25".

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